



ENVIRONMENTAL

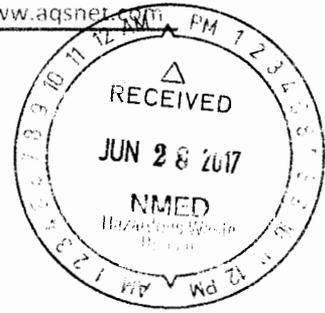


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June 26, 2017

DCN: NMED-2017-27

Mr. David Cobrain
New Mexico Environment Department (NMED)
Hazardous Waste Bureau
2905 Rodeo Park Dr. E/Bldg 1
Santa Fe, NM 87505-6313



RE: Technical Review Comments on the *RCRA Facility Investigation at TU504*, Cannon Air Force Base (CAFB), New Mexico, September 2016.

Dear Mr. Cobrain:

This letter addresses our risk assessment review of the *RCRA Facility Investigation at TU504*, dated September 2016 (TU504 RFI). The driving contaminants of concern for this site were polynuclear aromatic hydrocarbons (PAHs). The February 2017 NMED Soil Screening Levels incorporate updated toxicity data for PAHs, which resulted in higher screening levels than the 2015 screening levels applied in the assessment by CAFB. As part of our review, we re-evaluated the calculation of residential risk using the 2017 screening levels to determine if the site would pass residential levels. The resulting cancer risk, while lower (3.6E-05), is still above acceptable the target level of 1E-05. As indicated in Section 6.2, Conclusions and Recommendations, AQS agrees that Cannon Air Force Base (CAFB) cannot achieve corrective action complete (CAC) without controls at TU504. As such, TU504 should remain on Table 2 (CAC with Controls Status) of the RCRA permit.

While we agree with the conclusions of the risk analysis, some discrepancies were identified during the technical review and are addressed in the attached technical review comments.

If you have any questions, please contact me at (801) 451-2864 or via email at pwalton@aqsnnet.com.

Thank you,

Paige Walton
AQS Senior Scientist and Program Manager

cc: Gabriel Acevedo, NMED (electronic)
Joel Workman, AQS (electronic)

Attachment

**Draft Technical Review Comments on the RCRA Facility Investigation at TU504
Cannon Air Force Base New Mexico
September 2016**

Technical Review Comments

1. Section 3.1, RFI Objective. The first sentence of Section 3.1 indicates that the overall objective of the RFI at TU504 was to evaluate vapor intrusion and the soil-to-groundwater pathway. However, Section 1.2, Purpose and Scope, states “The purpose of this RFI is to evaluate the risks to human health and ecological receptors and evaluate the soil-to-groundwater pathway to determine the potential impacts to groundwater from existing soil contaminants.” In addition, Section 3.4.1, Preliminary Site Conceptual Exposure Models, notes that ingestion of contaminated soil, dermal contact with contaminated soil, inhalation of airborne soil particulates and volatile emissions, as well as vapor intrusion are complete pathways at TU504 and were evaluated in the risk screening. Section 3.4.1 also states that the soil-to-groundwater pathway is “considered to be limited” at the site, although a quantitative evaluation was performed. Thus, the objective stated in Section 3.1 appears limited. Based on the information provided in the RFI, it appears that the primary objective of the investigation to demonstrate the level of potential impact to human health represented by measured soil and soil gas concentrations; collection of soil gas data and evaluation of the vapor intrusion and soil-to-groundwater pathways appear to be secondary objectives. Revise Section 3.1 to present objectives that reflect the purpose and scope of the RFI as documented in other sections of the text.

2. Section 3.4.3, Soil Exposure Intervals. The last sentence in Section 3.4.3 states: “...no surface (0 to 1 foot) data was collected for TU504; therefore, the industrial/commercial worker exposure interval for TU504 was defined as 0 to 5 feet bgs [below ground surface].” As noted in Section 3.4.3, the NMED Soil Screening Guidance (SSG) recommends an exposure interval of 0 to 1 foot bgs for industrial/commercial workers. Thus, use of data from the 0 to 5 ft bgs interval for this receptor introduces uncertainty into the risk analysis. Further, Section 3.4.3 should identify the approach taken by CAFB as a source of uncertainty and indicate that the uncertainty will be addressed in the uncertainty analysis for the risk screening. Revise Section 3.4.3 to identify the use of data from the 0 to 5 feet bgs interval as a source of uncertainty in the analysis and include a reference to the uncertainty analysis for more details regarding the impact of the implemented approach on the results of the risk screening for industrial/commercial workers.

3. Section 3.5, Ecological Screening-Level Evaluation Methodology. Section 3.5 indicates that a preliminary ecological evaluation was conducted for TU504 during the 2014 RCRA Facility Assessment (RFA). The discussion concludes with the assertion that no further action regarding ecological risk is warranted at TU504 due to the absence of ecological habitat, potential receptors, and complete pathways. However, no lines of evidence are included in the discussion that support this assertion. A reference to the results of the ecological evaluation in the 2014 RFA was expected as support for the assertion but no reference was provided. Revise Section 3.5 to provide lines of evidence supporting the

assertion that no ecological habitat, potential receptors, and complete exposure pathways exist at TU504. If the information supporting this assertion is contained in the 2014 RFA, a formal reference specific to the ecological evaluation should be provided in Section 3.5.

4. Section 5.4.3, Evaluation of Petroleum Hydrocarbons. Some confusion exists between the first paragraph of Section 5.4.3 and Table E-8, Human Health Quantitative TPH Screening Evaluation Results for TU504, regarding frequency of detection. Section 5.4.3 states that Diesel Range Organics (DRO) were detected in 6 of 22 soil samples and Oil Range Organics (ORO) were detected in 10 of 22 soil samples. However, Table E-8 indicates DRO were detected in 12 of 22 samples and ORO were detected in 16 of 22 samples. Section 5.4.3 should be revised to explain the discrepancy between the frequency of detection information in the text and the table. However, if either the text or table contains errors in the frequency of detection information, Section 5.4.3 and Table E-8 should be revised for accuracy and consistency.
5. Section 5.5, Site Conceptual Exposure Model (SCEM). The results of the vapor intrusion (VI) assessment are discussed at the bottom of page 5-9 and top of page 5-10. However, the quantitative results from VI analysis are never added to the risks estimated for other pathways in the risk analysis. Revise Section 5.5 to include a table showing total cumulative risk across all pathways addressed in the risk analysis. It is recommended that the new table combine the results listed in the table entitled Hospital Abandoned UST (TU504) Refined Screening-Level Cumulative Risk and Hazard Indices for Soil (Section 5.4.5, Refined Quantitative Risk Screening Evaluation for Soil, top of page 5-7) and the results listed in the table entitled Hospital Abandoned UST (TU504) Screening-Level Cumulative Risks and Hazard Indices for Vapor Intrusion (Section 5.4.4, Vapor Intrusion Pathway, page 5-5).